Concentrating Solar Power

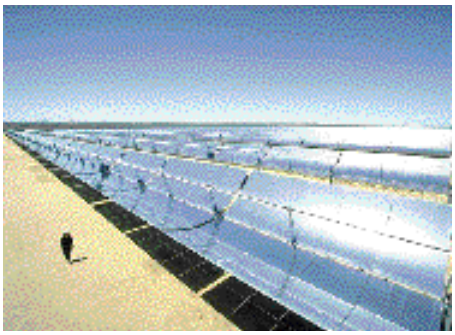
Industry Roadmap for the New Millennium

THE SUPER SOLAR POWER

Concentrating Solar Power (CSP) products use curved reflecting surfaces or advanced optics to capture and concentrate the sun's energy. The portfolio of CSP technologies includes parabolic troughs, central receivers with a field of heliostats, dish collectors with engine or photovoltaic receivers, and various building-integrated options.

Our Vision

Concentrating Solar Power, the world's *Super Solar Power*, is a major national and global energy resource. It provides affordable, clean, and reliable energy over a range of sizes from small (kilowatts) to large (megawatts), which will make CSP systems preferred by energy customers around the world. Because *Super Solar Power* is dispatchable, it is there when needed most. It is an essential element of our national energy portfolio—improving our nation's energy security and environment while providing value and benefits to its customers.



Parabolic Trough Technology

Central Receiver Technology

Our Mission

***Super Solar Power* is the most cost-effective solar power generated in the world today**. We have more than 350 MW of commercial capacity operating reliably today, and will expand our market through further technical advances and cost reductions. Government/industry partnerships are key to fulfilling our mission to provide affordable, reliable, and stable energy for energy consumers; to improve the environment; to expand exports; and to increase employment.

Why Concentrating Solar Power?

Concentrating Solar Power is available today in distributed and large-scale systems, and provides the following benefits:

Energy

- Reduces risk of fuel price volatility
- Reduces dependence on imported fuels
- Reduces peak power demand
- Enhances transmission and distribution reliability
- Offers 24-hour supply availability via storage or hybrids
- Delivers heat, power, or both
- Maximizes solar energy conversion efficiency

Environment

- No hidden health or environmental costs
- Green energy marketing option
- Provides a popular customer choice for clean, reliable energy

Exports

- U.S. pioneered technology
- Serves remote/rural applications in developed and developing countries
- Provides a positive impact on trade balance

Employment

- New capacity provides construction and manufacturing jobs nationwide
- Provides high-tech jobs in rural areas

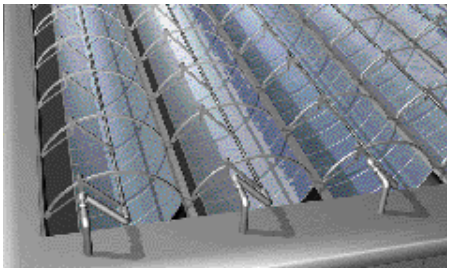
The Super Solar Power

No other technology can provide full-time generation with as low emissions, and cover a range of sizes from small to large-scale generation.

Dish Electric Technology

Technology Overview

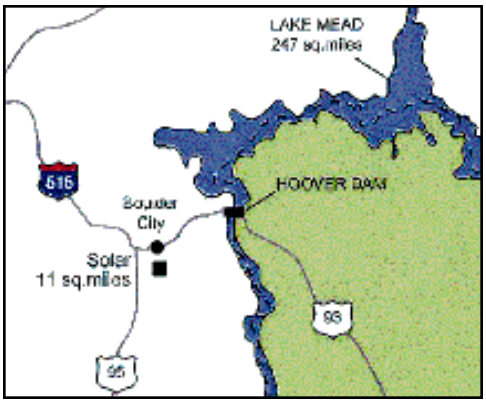
CSP uses concentrated solar energy for a variety of uses. The sun's concentrated energy can be used alone or with conventional fuels to run steam turbines for large-scale power generation. It can be used in small-scale applications as an effective clean distributed power resource. Concentrated solar energy can also produce the high temperatures needed by small heat engines to generate power, or the energy can be used directly to meet a variety of heating and cooling needs. In addition, concentrated solar energy enhances the output of solar cells. CSP offers a range of products that target a range of applications including large (50 to 200 MW) central station power plants; smaller distributed power systems (from 2-kW on-site generation to 50-MW grid-support power); and complete building-integrated energy systems for power, heating and cooling, and industrial process heat.



Building-integrated CSP

Goals

- Short-term – 1,000 MW grid connected and 5 million square feet of building-integrated systems for commercial buildings in the next five years
- Central Station Power – 5% of the year 2020 energy needs, or about 20,000 MW
- Distributed Generation – 15% of the year 2020 distributed generation market or about 2,000 MW



The black square shows the area CSP would require to supply the same generating capacity as the Hoover Dam (2,074 MW).

Strategies

The Concentrating Solar Power industry has invested and continues to invest many millions of dollars in CSP technology and market development. Acoordinated strategy of private and public investment will help accelerate provision of CSP benefits to energy consumers in the U.S. and around the world.

- Industry is developing private-sector projects with the targeted assistance of private and public partnerships to bring CSPsystems to market while the U.S. industry continues to invest in technology advances to bring the full potential value of this technology to customers.
- Industry is establishing a premier project to showcase CSP technologies through a collaborative regional initiative in the Southwest with state and local governments, utilities and regional power authorities, federal government, and the private sector.
- Industry counts on a sustained Department of Energy Research, Development and Demonstration program, federal tax support, and other policies. In addition, industry will tap into other valuable government programs such as the Small Business Administration, Interior and Park Service Procurements, Rural Utility Service, State Energy Offices, and others.
- Industry is establishing partnerships with state and federal agencies to provide power for ongoing power projects.

How Our Public Partners Can Help

The industry will continue to invest in its technology, develop new projects, and bring *Super Solar Power* to energy consumers. Our public partners can help make this vision a reality by:

- Providing a stable Department of Energy budget for research and development, field demonstration, pre-commercial validation testing, and improvement of existing projects.
- Legislating energy production tax credits and capital investment incentives.
- Purchasing power under long-term agreements.
- Forming a lending agency or opening a pathway to an existing agency, such as Fannie Mae, to provide low-cost loans or a revolving loan fund for CSP projects.
- Providing active and consistent support for CSP through all levels of the Department of Energy and the national laboratories.
- Enacting Solar Renewable Portfolio Standards.

The CSP Industry

For more information, please contact (representing the U.S. CSP industry):
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